

1. Starting from the positive x-axis, a rotation of -623° would land in what Quadrant?
2. Find the angle of smallest possible positive measure coterminal with -274°
3. $\cos 225^\circ =$
4. Name the function that is positive in both the first and third Quadrants.
5. If $\sin \theta = -\frac{\sqrt{3}}{2}$, then $\theta =$
6. If $\sin \theta = \frac{\sqrt{3}}{2}$ and $\cos \theta = \frac{1}{2}$, then $\tan \theta =$
7. The reciprocal of the secant function is
8. Find all angles $[0, 2\pi)$ such that $\csc \theta = 2$.
9. If $\sin \theta = -\frac{1}{2}$, then $\csc \theta =$
10. Convert 240° to radians.
11. Convert 205° to radians.
12. Convert $\frac{7\pi}{6}$ to degrees.
13. An angle whose measure is $\frac{2\pi}{5}$ radians is how many degrees?
14. On the unit circle, the y-coordinate is what function?

15. The terminal ray of an angle θ in standard position passes through $(2, -3)$. What is $\sec \theta$?

16. $(1 + \tan^2 x) =$

17. $\cos 36^\circ \cos 54^\circ - \sin 36^\circ \sin 54^\circ =$

18. If $\sin \theta = \frac{1}{4}$, then $\sin 2\theta =$

19. $\frac{\sec \theta \cot \theta}{\cos \theta} \cdot (1 - \sin^2 \theta) =$

20. Simplify by expanding $\cos(x - \pi)$

21. $2 \cos 25^\circ \sin 25^\circ$ simplifies to what?

22. For what values of x is $\sin x = \cos x$?

23. What is the domain of $y = \sin^{-1} x$?

24. In which quadrant is the sine negative and the cosine negative?

25. 4 radians equal to how many degrees?

26. $\theta = \cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$ Find θ .

27. $\theta = \csc^{-1}(\sqrt{2})$ Find θ .

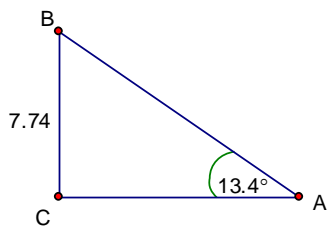
28. $2\cos^2 x + \cos x - 1 = 0$ Solve for all values of x .

29. $4\sin^2 x = 3$ Solve for all values of x :

30. In triangle ABC, find A if $B = 35.5^\circ$, $a = 41.7$ ft., $b = 26.8$ ft.

31. Find the angles of triangle ABC if $a = 91$ ft., $b = 142$ ft., and $c = 206$ ft.
32. Find the area of triangle ABC if $b = 23$ in., $c = 19$ in., and $A = 135^\circ$.
33. Find the area of the triangle ABC if $a = 24$ in., $b = 28$ in., and $c = 36$ in.
34. Find the values of $\sin \theta$, $\cos \theta$, and $\tan \theta$ for the angle θ in standard position having $(-2, -3)$ on its terminal side.
35. Evaluate $\sin^2 23^\circ + \cos^2 23^\circ$
36. Find $\sin \alpha$ and $\cos \alpha$ given the following:
 $\tan \alpha = \frac{5}{3}$ and $\sec \alpha < 0$
37. Find an angle in the interval $[0^\circ, 90^\circ)$ that satisfies
 $\tan \beta = 15.23456$

38.



The right angle is at C. Solve the triangle.

39. Find $\cos \frac{8\pi}{3}$. Give exact value.
40. Evaluate $\csc \frac{5\pi}{3}$. Give exact value.
41. Give the exact value of x in the interval $(\frac{3\pi}{2}, 2\pi)$ such that $\tan x = -1$

For 42 and 43, use a calculator to find the following:

42. $\sin 4.42153$

43. $\cot 5.39814$

44. For the equation $y = -4 + 3 \sin \left(x + \frac{\pi}{3} \right)$ what are the amplitude, period, vertical and horizontal shift?

45. Graph: $y = \cos \left(x + \frac{\pi}{6} \right)$

46. Graph: $y = -2 \sec(x)$

47. Graph: $y = \sin 2x - 1$

48. Graph: $y = -\cos \frac{1}{2}x$

49. Given $\sin x = -\frac{3\sqrt{10}}{10}$ and $\left(\frac{3\pi}{2}, 2\pi \right)$, find the remaining 5 trig functions of x .

50. Given that $\tan x = \frac{1}{2}$, and $0 \leq x \leq \frac{\pi}{2}$, find $\csc x$

51. Let $\cos \alpha = -\frac{\sqrt{5}}{5}$ with α in quadrant II and let $\sin \beta = -\frac{4}{5}$ with β in quadrant III.

Find $\cos(\alpha - \beta)$

52. Use identities to express the following in terms of $\sin \theta$ and $\cos \theta$ and simplify.

$$\frac{(1 - \sec^2 \theta) \cos \theta}{\tan \theta}$$